Maine's Coastal Swim Beach Risk Assessment Matrix

Guidelines for Beach Closures (2/03)

This worksheet is designed to help communities assess potential human health risks associated with water pollution at coastal swim beaches. Much of the information needed to answer the following questions may have already been documented in shoreline surveys, beach-user surveys, municipal surveys and through water quality data. Contact the Coastal Swim Beach Monitoring Program Advisory Board members to locate these documents(see end of the document for contacts). Keep in mind that conditions will change over time and it will be necessary to revise this document regularly.

The final score is assigned a grade and there are associated recommendations that accompany that grade. These grades are meant as a ***guideline*** *to help communities assess the safety of their beaches for recreational water users. In order for these guidelines to be effectively used as a component of a risk-assessment system, they must be used in conjunction with a regular water quality monitoring program. These two tools, regular water quality monitoring and this risk-assessment matrix, are intended to guide communities in determining when, or if, to close their beaches should pollution pose a threat to recreational water users. This completed matrix will assist you in decision making and problem solving for your beach.*

Directions: *Complete this Assessment Matrix for each section of the beach defined by your sample points (where you take water quality monitoring samples). You may choose to define the beach area based on density of use. Defining the specific area will allow you to make management decisions for a region of the beach, rather than treating the whole beach as one area. Work through the questions to a final score. For any questions to which you do not know the answer; the data is not available; or does not exist, place a star (*) in the blank. These will be used to determine the degree of variability in the final score. There may be cases in which the evaluators of a beach choose to assign a given risk a score higher than that suggested in this matrix due to proximity, upkeep, true level of usage and other factors. Evaluators may also choose to score a given risk factor lower than suggested for the same reasons. These reasons should be documented in the final comments section at the end of this form.*

Beach Name_____
Beach Section (define outermost boundaries)_____
Town_____
Date_____
Evaluators Names_____
_____
_____

I. Score 1 point for each of the following that impact the beach as follows:

1. **adjacent (and/or downstream) to the beach property**
2. **adjacent to a stream that empties onto the beach area within ¼ mile of the beach boundary**
3. **otherwise impact the beach due to proximity or location**

(one point for each location)

1. Steady stream ____
2. Intermittent stream ____
3. Inactive straight pipe ____
4. Land drain ____
5. Animal Farm or Kennel ____
6. Gutter Drain ____
7. Sink/laundry, basement, drain (gray water) ____
8. Boats with cabins moored within a 2 mile radius of the swimming area ____
9. Stormwater runoff ____
10. In Ground Septic Systems ____
11. The area is on the 303d list (or has a river flowing into or adjacent to the beach area that is on the 303d list) ____
    a. Add 5 points if bacteria is listed as a pollutant in the 303d list. ____

(Find the 303d list at the Maine Department of Environmental Protection site: www.state.me.us/dep/blwq/docmonitoring/303d981.pdf_)

Section I. Total Points____

II. Score 15 points for each of the following that impact (see impact guidance in I.) the beach property (15 points for each location):

1. Active Straight pipe ____ (Note: this is a DEP violation)
2. Malfunctioning septic system ____
3. Septic systems that have not been checked for over 3 years ____
4. An overboard discharge unit impacting the swimming area ____
5. Marina/Moorings ____
6. Combined Sewer Outfall ____
7. Outhouse ____
8. Stormwater pipe ____

Section II. Total Points____

III. Score Beach Conditions

1. Approximate number of people that visit the beach during the summer season.

< 50,000 = 1 point 50,000-150,000 = 5 points > 150,000 = 10 points _____

2. Approximate number of people that visit any one-mile stretch of the beach during the day of maximum use.

< 50,000 = 1 point 50,000-150,000 = 5 points > 150,0000 = 10 points _____

3. Are there public restrooms at the beach? Yes = 0 points No = 15 points _____

4. Are dogs allowed on the beach? Yes = 5 points No = 0 points _____

5. Are large numbers of wild animals regularly present on/near the beach (flocks of birds)? Yes = 2 points No = 0 points _____

6. Impervious surface scoring (Based on areas that impact the beach based on location/proximity):

a) 5 points for each parking lot within 100 feet of the beach boundary _____

b) 1 point for every building/house roof within 200 feet of the beach boundary _____

c) 5 points if there is a road the length of the beach within 500 feet _____

Section III. Total Points_____

IV. Beach History:

1. Was this beach closed/or 'no swim advisory' posted during the previous bathing season due to bacterial contamination? Yes = 10 points No = 0 points _____

2. How long was the beach closed during the previous bathing season due to bacteria?

1-5 days = 5 pts 6-10 days = 8 pts 11-15 days = 15 pts >16 days = 20 pts _____

Enter 0 if there were no closures

3. Has storm sampling (sampling during times of unusually high rainfall) resulted in entrococci scores of greater than ___ in more than one location or on more than one occasion? Yes = 10 points No = 0 points _____

4. Was this beach closed/or 'no swim advisory' posted during the bathing season two years ago? Yes = 5 points No = 0 points _____

5. Was this beach closed/or 'no swim advisory' posted during the bathing season three years ago? Yes = 5 points No = 0 points _____

6. Any confirmed illnesses reported in the past 4 years?

Yes = 5 points No = 0 points _____

Section IV. Total Points_____

V. Subtract points for the following items:

1. Subtract 5 points if there is a marine vessel pump-out station within a 3 mile radius _____
3. Subtract 10 points if all properties within the area that drain to the beach are tied to a municipal sewer system _____
4. Subtract 10 points if all properties with the area that drain to the beach are tied to a municipal storm water system _____
3. Subtract 10 points if the beach has at least a 200 foot buffer area of plants along the ENTIRE length of the beach (except for narrow access points) _____
4. Subtract 5 points if beach management has posted educational signs about pollution resulting from soiled diapers, dog feces, gull-feeding and/or advertising public restroom locations _____
5. Subtract 3 points if poop bags and waste receptacles are provided at multiple entry points for dog owners _____

Section V. Total Points_____(SUBTRACT THESE)

VI. Sub-Total Total (all sections) Points_____

VII. Number of Stars (*) in the completed form_____(this is your degree of variablity (+/-). Enter this score below with the grand total score.

VIII. Grand Total Score_____+/-_____

GRADING SYSTEM:

A – score < 20 points
Suggested Action: Continue to maintain these healthy conditions. On-going monitoring is required to ensure safe use of recreational water.

B – 21 – 35 points
Suggested Action: It may be appropriate to post warning to swimmers that rain storms increase pollution and likelihood of unhealthy swimming conditions. On-going monitoring is required to ensure safe use of recreational water. Education should be provided to beach-users to promote healthy practices at the beach.

C – 36 – 50 points
Suggested Action: It may be appropriate to post warning to swimmers that rain storms increases pollution and likelihood of unhealthy swimming conditions. It may be necessary to monitor more often than once a week to ensure that risk factors are not having periodic effects on the recreational water. Pollution sources need to be identified and removed. Education needs to be provided to beach-users to promote healthy practices at the beach.

D – 51- 69 points
Suggested Action: Post warning to swimmers that rain storms increases pollution and likelihood of unhealthy swimming conditions. Monitor more often than once a week to ensure that risk factors are not having periodic effects on the recreational water. Pollution sources need to be identified and removed. Education needs to be provided to the community and beach-users to promote healthy practices at the beach and to promote life-styles that decrease non-point source pollution.

F – > 70 points
Suggested Action: Close beach until water sampling demonstrates healthy swimming conditions. Pollution sources need to be identified and removed. Education needs to be provided to the community and beach-users to promote healthy practices at the beach and to promote life-styles that decrease non-point source pollution.

FINAL COMMENTS AND PLANNED ACTIONS:

Coastal Swim Beach Monitoring Program Contact Information:

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For more information about the Healthy Beaches (Fresh Water) contact:

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